ARAX–60 (645) MLU

MEDIUM FORMAT CAMERA

INSTRUCTIONS FOR USE

1. GENERAL NOTES

The ARAX-60 is a medium-format single lens reflex (SLR) camera with light-tight rubberized fabric curtain shutter and 6x6cm (ARAX-60) or 6x4.5cm (ARAX-645) frame size. The camera is designed to meet the needs of any photographer, from the advanced amateur to the working professional

The ARAX-60 cameras are hand selected KIEV-60s that undergo an extensive mechanical upgrade process. These camera, lens and TTL prisms are re-assembled, adjusted, tested, and matched to provide superior performance. Any deficiencies in the basic Kiev design are addressed via reinforcement and/or replacement.

A new upgraded MLU (Mirror Lock-Up) system is installed on those models that are ordered accordingly. The Mirror Lock-Up system operates independently of the shutter release. This feature eliminates any vibration caused by the mirror movement during macro photography or working with long focal length lenses. The shutter mechanism is re-built and upgraded for durability and accuracy, and the interior of the camera is treated with a new light-absorbent coating. Both film advance and frame spacing are checked and adjusted. Additional tripod mount reinforcement results in improved reliability of the shutter speed mechanism when using a tripod. ARAX cameras have a special durable light-absorbent black finish (the original coating is removed by a special sand blasting process and the new proprietary finish is applied), and maximum viewfinder brightness is achieved via our special focusing screen with a frame size scale. Free tripod adapters are included, simplifying camera mounting on any type of tripod.

All Lenses and Prisms are also hand picked and all optical and mechanical functions are re-tested to meet the high standard of ARAX cameras. Finally, each camera has to pass a rigorous final inspection and professional testing.

The ARAX cameras are the future of the medium format generation giving absolutely exceptional performance due to their superior quality. With proper handling and care, your new ARAX camera will enable you to produce high-quality medium format transparencies, and dramatic large black and white or colour prints for many years to come.

The camera is designed to use 61.5-mm wide non-perforated roll film (type 120). The camera’s curtain shutter offers exposure times over a range from 1/1000 to 1/2 sec. and manual exposure "B".

The camera comes complete with the MC ARSAT 2.8/80 “standard” lens. The lens is provided with a special multi-layer antireflection coating (MC = Multi - Coating), which upgrades the image quality and enhances its contrast due to better-integrated transparency and reduced light dispersion. The focal length of the lens is 80 mm, the relative aperture is 1:2.8, the diaphragm setting limits are f2.8 - f22, and the near focusing limit is 0.6 m.

Critical focusing is accomplished with the aid of a micro-raster or a range finder wedge arranged in the center of the field of view and with the aid of a ground-glass surface.

The shutter cocking mechanism is of the lever type, interlocked with the film-transport mechanism and frame counter.

The back of the camera is hinged. The frame counter returns to its zero position automatically when the back of the camera is opened.

The camera is designed to use most interchangeable lenses fitted with a "Pentacon Six" type bayonet mount. The hood-type viewfinder enables the image to be viewed on the ground-glass surface either with or without a magnifying lens. The field of vision of the hood-type viewfinder measures 53x53 mm. Magnification of the TTL (Through the Lens) prism finder eyepiece is 2.5x, the field of vision measures 49x51.5 mm.

The camera is provided with flash synchronization compatible with cabled flash units.

The camera operates in the temperature range from minus 15 to plus 45^{o} C.

INPORTANT!

Before starting to use your new ARAX camera, be sure that you have read and understand this manual, preferably with the camera in front of you. You will then be ready to load your film and begin making great photographs. Congratulations on your purchase, and welcome to the ARAX family!

2. MAIN UNITS AND PARTS

1 - shutter cocking lever
2 - TTL prism viewfinder
3 - threaded cable release socket
4 – shutter release button
5 – Strap mount
6 – Lens mount locking ring
7 - housing
8 - lens
9 – Flash mount
10 - MLU release button
11 - frame counter window
12 - viewfinder lock button
13 - diaphragm scale
14 - depth of field scale
15 - distance scale
16 – Shutter speed dial
17 - back
18 - Take-up spool
19 - Film spool
20 - depth-of-field control lever
21 - tripod socket
22 - take-up spool lock
23 - replaceable eye shade
24 - delivery spool lock
25 - back lock

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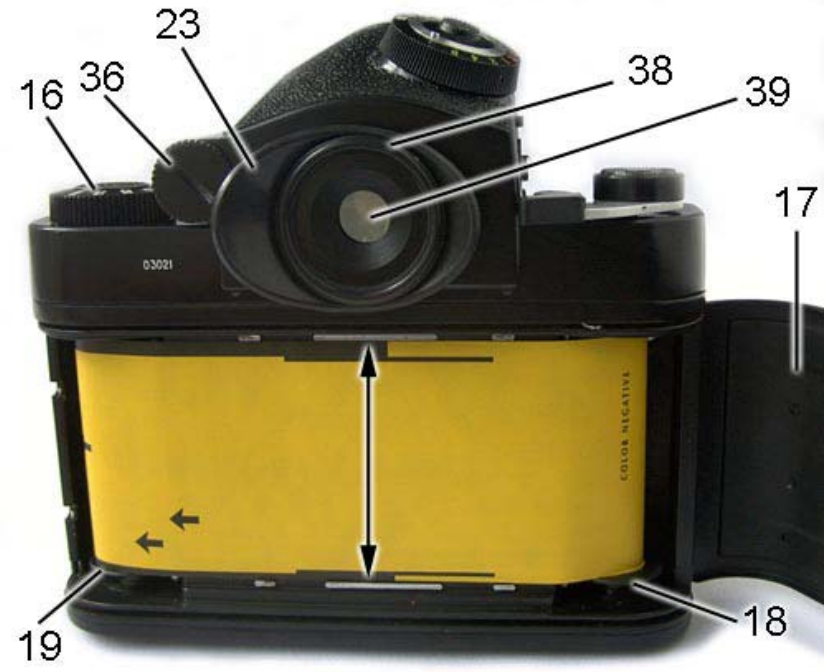
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3. OPERATING PROCEDURE

3.1. Camera Loading

The camera can be loaded in light (preferably in the shadow).

Take the camera out of the carrying case. Open back 17 by first sliding the arrow up to the stop and depress button 25 located on the lower cover. Pull locks 22 and 24 by the clips, turn them counter-clockwise, securing them, This will bring pivots 18 and 19 down. Insert the take-up spool into the right-hand chamber of the camera so that the upper centre carrier fits its slot.

Holding the spool, introduce lower centre 18 into its hole turning lock 22 clockwise.

Tear the paper tag off the leader end. Insert the spool with film into the left-hand chamber of the camera so that the carrier of the upper centre enters the spool slot. Holding the film and leader by a hand to prevent unrolling, put lower pivot 19 through the spool hole, turning lock 24 clockwise.

Thread the leader end into the take-up spool and turning the latter wind the leader onto it until the mark on the leader aligns with the red index on the camera housing.

To obtain the full-specified number of pictures on the film and to ensure correct operation of the frame counter observe the following rules:

- when loading wind the leader tightly on the take-up spool;
- take measures against leader cocking, creeping over the spool flanges or crumpling leader edges;
- when cocking the shutter, take care to bring the lever to the stop in one smooth motion (do not cock the shutter using several small turns of the lever).

Close the back by pressing it to the camera until a click is heard.

3.2. Preparing the Camera for Shooting

Make three blank shots to wind the leader onto the take-up spool. Now after the shutter is cocked the next time figure "1" will appear in frame counter window 11 which corresponds to the first frame on the film.

Set the film-in-use speed on scale 10 by holding lever 1, and turn the disk with scale 10 until the film speed number aligns with the index. The film speed scale is given in units of DIN.

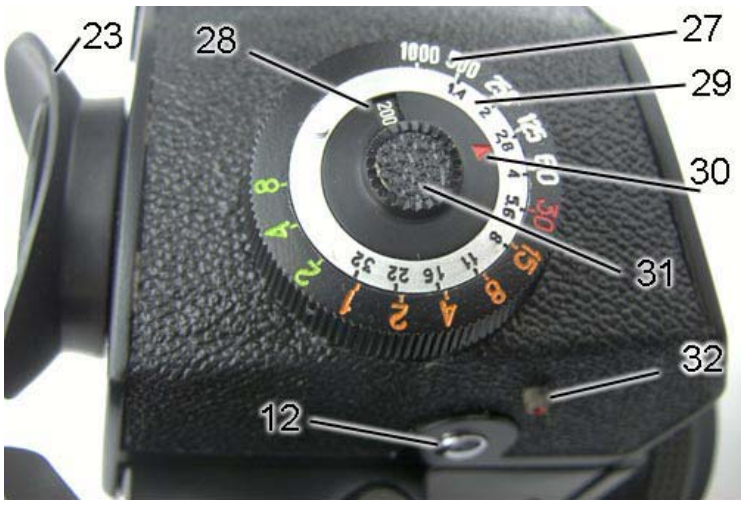
3.3. Shooting

The operation of the camera breaks down into the following steps:

1. Shutter cocking and film transport
2. Determining the exposure time (shutter speed and aperture);
3. Shutter speed setting
4. Aperture setting
5. Composition
6. Focusing
7. Mirror lock up release (optional)
8. Shutter release

Cock the shutter turning lever 1 up to the stop. If the shutter is fully cocked, the lever will automatically return to the initial position, if not, it will remain in an intermediate position (in this case it should be cocked again) An incomplete cocking of the shutter should be avoided. At the beginning of cocking the shutter a slight increase of force applied to the lever may be felt. In cocking the shutter the film is wound through one frame and the next number appears in the frame counter window. The counter indicates the number of frames shot.

Determination of the exposure time is carried out with the shutter being cocked.



For determining the exposure time set on the calculator the speed of the film loaded into the camera turning knob 31 until the film speed values in units of DIN appears in windows 28.

Set on the calculator the lens speed turning scale 29 until the appropriate value coincides with index 30.

The lens speed means the number corresponding to the maximum relative aperture. For example, for lens MC ARSAT 2.8/80 = 2.8.

For determining the "speed/aperture" combinations corresponding to the shooting conditions do the following:

- Press the exposure meter circuit actuating button 32 (it will be off automatically);
- Observing through viewfinder eyepiece 39 frame the subject so that its image will fall in the ranges of the zone of measurement of the viewfinder. In the field of vision of the viewfinder eyepiece you will see one of lighting signals: left = underexposed or right = overexposed. Slowly turn ring 27 up to the moment of lighting of the second signal (if left signal is lit - counter-clockwise, if right - clockwise). Determination of the exposure time is carried out at simultaneous illumination of both signals;
- Choose the "speed/aperture" pair, which you prefer for shooting on the calculator by exposure scale 27 and by diaphragm scale 29

Note:

Bright light not be permitted, as far as possible, to penetrate into the eyepiece. In this instance eye shades 38 and 23 should be used.

Set the chosen "speed/aperture" values on the camera exposure time knob scale and on the lens diaphragm scale.

Exposures may be set both with the shutter released and cocked turning knob 16 until the selected number aligns with index on the top cover. Settings from 1/ 1000 to 1/60 sec. with the shutter released require somewhat more effort than when the shutter is cocked.

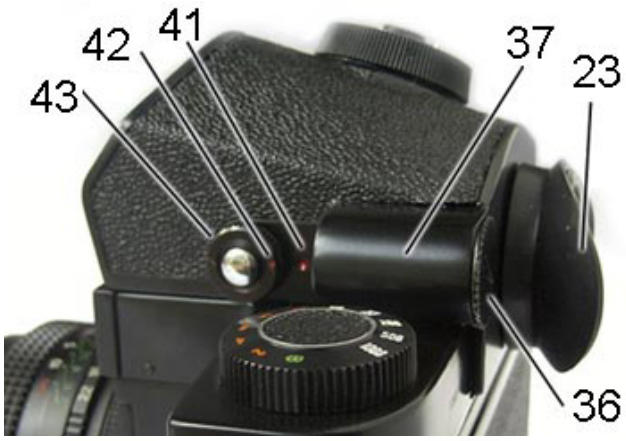
Manual exposure "B" setting should be set turning the knob clockwise only (between shutter speeds 1/ 1000 s and "B" the ring is locked).

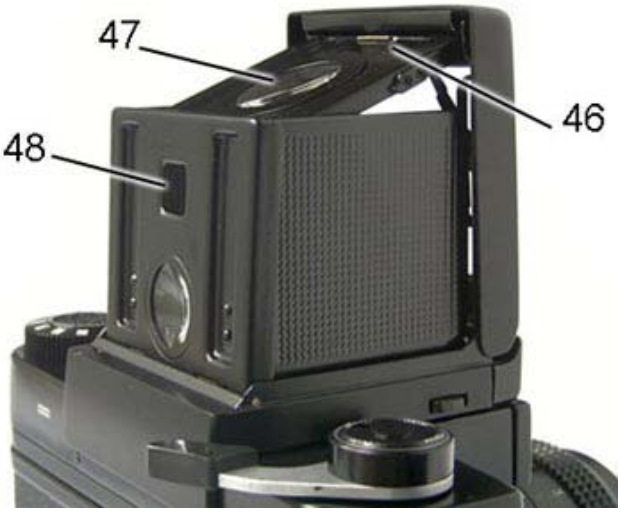
Set the diaphragm, turning ring 13 until the selected value aligns with the index on the stationary ring. The scale is fixed at all diaphragm values.

For critical focusing,, use the ground-glass surface, microscreen and wedges, or the distance scale. Turn the ring with scale 15. Focusing can be carried out only with the shutter cocked, when the mirror is in the working position and the diaphragm is fully open.

Depth of field is determined by the distance scale with the aid of additional scale 14. Depth of field can be checked by the image of the objects details on the ground-glass surface in the field of vision of the viewfinder, after pressing lever 20 down to the limit of its travel, then the lens will be closed to the opening set previously. After the lever is released, it will automatically return to the initial position and the diaphragm will fully open.

Depending on the specific conditions, composition can also be carried out by the use of the viewfinder hood.





To replace the TTL prism viewfinder with the viewfinder hood proceed as follows:

- turn ring 43 clockwise until it aligns with indexes 42 and 41. Depress button 12, lift the TTL prism viewfinder up;
- set viewfinder hood 45 on the guide pins (in so doing make certain that it is well secured on the camera).

Open the viewfinder hood, turning front wall 44 in the direction of the arrow illustrated in the Figure. In its end position the front wall of the hood is locked and the side and rear walls are automatically folded down. When lock lever 46 is shifted up, viewfinder lens 47 is set to the working position.

Upon completion of shooting with the aid of the viewfinder hood, press the viewfinder lens wall to the front wall of the viewfinder until the indexing lever snaps it in, then fold up the side walls (first left-hand, then right-hand), then the rear wall, and holding the latter, return the front wall into the initial position.

In rapid shooting (such as sports photography) the viewfinder hood can be used as a simple frame viewfinder. Then window 48 in the rear wall of the viewfinder hood will serve as one frame and the window in the front wall, closed in the non-working position with cover 49, as the other. The cover, when depressed, will turn and lock in the end position.

In shooting with the frame viewfinder focusing is effected either by the use of lens distance scale 15 or by the ground-glass through the eyepiece.

To fold down the frame viewfinder depress the wall of eyepiece lens 47, in this case cover 49 will return to the initial position.

After folding down the frame viewfinder, close the viewfinder hood as explained previously.

To release the camera shutter, gradually depress release button 4 up to the stop. During this action the lens will be stopped down, the mirror automatically rises and the shutter operates.

In the cameras equipped with the lifting MLU (mirror lock up) system, before pressing on the release button 4 you can raise the mirror before releasing the shutter. In order to lift the mirror it is necessary to press button 10. at that time the mirror will be lifted upwards, however the shutter is not being released. In order to then make an exposure with the mirror

up, just press the button 4. The camera will snap into action without the minimal vibrations that can affect the most critically sharp images.

Shooting with exposures in excess of 1/30 sec. usually requires the use of the tripod. The tripod socket in the camera is provided with the 3/8" thread. The shutter release button is equipped with threaded socket 3 to accommodate a standard cable release or other accessories..

NOTE: When using the camera with slow shutter speeds of 1/60th sec. or longer, continue to hold in the shutter release button when making an exposure, to prevent the shutter brake from engaging prematurely, resulting in uneven exposures.

4. UNLOADING THE CAMERA

Shooting can be carried out until the "K"-letter (end) appears in the frame counter window, which indicates that the film is used up. Then it is necessary to wind the remaining paper leader on the take-up spool with the aid of the shutter cocking lever. Since in this position the shutter cocking mechanism is disconnected, the release button may not be depressed each time after cocking.

Upon completion of rewinding (when rewinding is over, the force applied to the cocking lever diminishes) open the back of the camera, move out the take-up spool centre and remove the exposed roll.

5. REPLACEMENT OF LENSES

The camera is designed to use interchangeable lenses with a Kiev C (P-SIX) mount. To remove the lens turn nut 6 counter-clockwise up to the stop and disconnect the lens from the camera.

When installing the lens, it is necessary to fit it Into the camera so that guide pin of the lens gets into slot on the camera mouth. Then turning the nut clockwise to the limit of its travel secure the lens on the mount.

NOTE: The lens mount is a very precise mechanism. It may turn out that some lenses cannot be inserted in the lens mount. This usually happens with lenses which were manufactured without proper quality control.

These interchangeable ARSAT C lenses for the ARAX-60 (645) camera are available.

Description, ARSAT C	**Focal length,** mm	**Angle of view,** degrees	**Maximum relative aperture**	**Filter thread,** mm
3.5/30	30	180	1:3.5	m38x0.5
3.5/45	45	83	1:3.5	m82x0.75
PCS 3.5/45 Shift	45	83*/98**	1:3.5 (manual)	m82x0.75
PCS 4.5/55 Shift	55	69*/84**	1:4.5 (manual)	m72x0.75
PCS 3.5/65 Shift	65	66*/78**	1:3.5 (manual)	m72x0.75
3.5/65	65	66	1:3.5	m72x0.75
2.8/80	80	45	1:2.8	m62x0.75
2.8/120	120	36	1:2.8	m62x0.75
2.8/150	150	29	1:2.8	m82x0.75
3.5/250	250	19	1:3.5	m82x0.75
5.6/250	250	18	1:5.6	m62x0.75
5.6/500	500	9	1:5.6	m95x1

* - without shift
** - with shift

You can purchase any of this lenses on our website www.araxfoto.com

6. FLASH PHOTOGRAPHY

The Kiev 60 TTL camera is provided with the synchro-contact with receptacle 54 for the connection of a flash unit.To install the flash unit to the camera use the special flash shoe which fits on the arm fastening socket 9.

Shooting with a flash unit is performed with exposures from 1/30 to 1/2 s.

7. REPLACEMENT OF POWER SOURCE

To replace or install the batteries, unscrew the battery cap 37 on the metering prism, and observing the polarity ("-" of the power supply source should be arranged from the end of the compartment, "+" symbol is engraved on the cap) install the fresh batteries into the chamber. Never try to mix old and new batteries.

Battery for TTL prism viewfinders

Dimension		Volt	Nominal Capacity	Battery models						
Diameter	Height			GP	IEC	JIS	EVEREADY	VARTA	DURACELL	SONY
11.6mm	5.4mm	1.55V	165mAh	357	SR44	SR44	357	V357	D357	SR44W

8. USE OF LIGHT FILTERS

You can use light filters used as attachments, which can be screwed into the front part of the lens (thread M62x0.75).

The achromatic light filter UV-1x is used for weakening the effect of ultraviolet rays, for example, when taking pictures under high-mountain conditions, it is also helpful in colour photography.

The light yellow-green filter YG-1.4x improves tone reproduction of multi-colour objects on high-sensitive photographic materials with a slight loss of their sensitivity. Virtually correct tone reproduction of multicolor objects is achieved by the use of the filter on medium sensitivity films.

The light filter O-2.8X, orange, fully absorbs Ultraviolet Rays. It is used to obtain a particular contrast in shooting the compositions with clouds, water surfaces, landscapes with a noticeable shading of verdure, etc.

9. CARE AND STORAGE

Protect the camera from dust, moisture, snow, harmful vapors, jerks, jolting, impacts and sharp temperature variations.

Handle the camera with care, excessive force should never be required during operation.

Do not remove the lens unnecessarily since this may result in dirt and dust getting into the camera.

Clean the camera regularly. Remove the dust from its external and internal surfaces with a soft brush or blow off the dust with the aid of a rubber bulb. Thoroughly protect the optical components from getting dusty or dirty, try to avoid touching them with your fingers.

Having brought the camera from the frosty weather into a warm premises, do not open it immediately, let it become gradually warmed for 2-3 hours.

Don't leave your camera with cocked shutter for long time.

If any defects or faults have been discovered, do not attempt to carry out the repairs on your own. Any repairs and adjustments should be carried out by qualified specialists. Please write us at repair@araxfoto.com

NOTE [only crucial while the camera has the mirror up (uncocked shutter or with MLU-function)]:

The camera curtains are made from light-tight rubberized fabric and to preserve it against deterioration the following measures should be taken in shooting in the sun:

- **Remove the lens cap and open the viewfinder hood immediately before shooting;**
- **Do not direct the camera lens towards the sun;**
- **Do not leave the camera in the sun during long-term pauses between shootings.**

10. ONE YEAR WARRANTY

AraxFoto provides a one-year warranty [from shipping date] that all new cameras' and lenses' materials and workmanship shall be free from defects, and operate properly according to the manufacturer's specification. During the warranty period, AraxFoto will repair or replace any defective item at the customer's request. Shipping charges are the sole responsibly of the purchaser. The unit will be restored to proper operating condition at no charge to you (includes all parts and labour).

This warranty is contingent upon normal and proper use of the product and does not cover damage which occurs in shipment, or damage or failure resulting in whole or in part from alteration, unusual physical or electrical stress, misuse, attachment or installation of or use of the equipment with any part, device, or product not approved by manufacturer, failure to follow the most current instructions published by manufacturer and shipped with the camera, with respect to proper use of the product, abuse, neglect, fire, accident, flood or act of God. This warranty does not cover a product on which the original identification marks or serial numbers have been removed or altered. Cosmetic damage is not covered under this warranty.

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